

**Amendment and Response under 37 C.F.R. 1.116**

Applicant: Gopalan Raman

Serial No.: 10/789,040

Filed: February 27, 2004

Docket No.: 200400043-1

Title: FLUID EJECTION DEVICE

**IN THE CLAIMS**

Please amend claims 1, 11, 13, 21, and 53 as follows:

1. (Currently Amended) A fluid ejection device, comprising:
  - a chamber;
  - a first fluid channel and a second fluid channel each communicated with the chamber;
  - a first peninsula extended along the first fluid channel and having substantially parallel sides, and a second peninsula extended along the second fluid channel and having substantially parallel sides; and
  - a first sidewall extended between the first peninsula and the chamber, and a second sidewall extended between the second peninsula and the chamber,
  - wherein the first sidewall is oriented at a first angle to the chamber and the second sidewall is oriented at a second angle to the chamber, wherein ~~an absolute value of the second angle is less than an absolute value of the first angle,~~
  - wherein the first fluid channel includes a first portion extended along the first peninsula and a second portion extended along the first sidewall, and the second fluid channel includes a first portion extended along the second peninsula and a second portion extended along the second sidewall, and
  - wherein the chamber extends into the second portion of the first fluid channel and the second portion of the second fluid channel.
2. (Original) The fluid ejection device of claim 1, further comprising:
  - a resistor formed in the chamber.
3. (Original) The fluid ejection device of claim 1, wherein a width of the first fluid channel along the first sidewall and along a portion of the first peninsula is substantially constant, and a width of the second fluid channel along the second sidewall and along a portion of the second peninsula is substantially constant.
4. (Original) The fluid ejection device of claim 1, further comprising:

**Amendment and Response under 37 C.F.R. 1.116**

Applicant: Gopalan Raman

Serial No.: 10/789,040

Filed: February 27, 2004

Docket No.: 200400043-1

Title: FLUID EJECTION DEVICE

---

an island separating the first fluid channel and the second fluid channel.

5. (Original) The fluid ejection device of claim 4, wherein the island is asymmetrical.
6. (Original) The fluid ejection device of claim 4, wherein the island has a first side oriented substantially parallel with the first peninsula and a second side oriented substantially parallel with the second peninsula.
7. (Original) The fluid ejection device of claim 4, wherein the island has a first chamfered corner oriented substantially parallel with the first sidewall and a second chamfered corner oriented substantially parallel with the second sidewall.
8. (Original) The fluid ejection device of claim 1, wherein the first sidewall and the second sidewall are substantially linear.
9. (Previously Presented) The fluid ejection device of claim 11, wherein a combined minimum width of the first fluid channel and the second fluid channel is in a range of approximately 34 microns to approximately 42 microns.
10. (Previously Presented) The fluid ejection device of claim 11, wherein a minimum length of each of the first fluid channel and the second fluid channel is in a range of approximately 29 microns to approximately 31 microns.
11. (Currently Amended) A fluid ejection device, comprising:
  - a chamber;
  - a first fluid channel and a second fluid channel each communicated with the chamber;
  - a first peninsula extended along the first fluid channel and a second peninsula extended along the second fluid channel; and
  - a first sidewall extended between the first peninsula and the chamber, and a second sidewall extended between the second peninsula and the chamber,

**Amendment and Response under 37 C.F.R. 1.116**

Applicant: Gopalan Raman

Serial No.: 10/789,040

Filed: February 27, 2004

Docket No.: 200400043-1

Title: FLUID EJECTION DEVICE

---

wherein the first sidewall is oriented at a first angle to the chamber and the second sidewall is oriented at a second angle to the chamber, wherein the second angle is different from the first angle,

wherein the first fluid channel includes a first portion extended along the first peninsula and a second portion extended along the first sidewall, and the second fluid channel includes a first portion extended along the second peninsula and a second portion extended along the second sidewall,

wherein the chamber extends into the second portion of the first fluid channel and the second portion of the second fluid channel, and

wherein a length of the first portion of the first fluid channel along the first peninsula is substantially parallel with a length of the first portion of the second fluid channel along the second peninsula.

12. (Previously Presented) The fluid ejection device of claim 11, wherein the first angle of the first sidewall is in a range of approximately 43 degrees to approximately 46 degrees, and wherein the second angle of the second sidewall is in a range of approximately 30 degrees to approximately 34 degrees.

13. (Currently Amended) A fluid ejection device, comprising:  
a chamber;  
a first fluid channel and a second fluid channel each communicated with the chamber;  
and

an island separating the first fluid channel and the second fluid channel,  
wherein the island is substantially rectangular and has a first side and a first chamfered corner each along the first fluid channel, and a second side and a second chamfered corner each along the second fluid channel, wherein the first chamfered corner is oriented at a first angle and the second chamfered corner is oriented at a second angle less than the first angle,

wherein the first fluid channel includes a first portion extended along the first side of the island and a second portion extended along the first chamfered corner of the island, and

**Amendment and Response under 37 C.F.R. 1.116**

Applicant: Gopalan Raman

Serial No.: 10/789,040

Filed: February 27, 2004

Docket No.: 200400043-1

Title: FLUID EJECTION DEVICE

---

the second fluid channel includes a first portion extended along the second side of the island and a second portion extended along the second chamfered corner of the island,

wherein the chamber extends into the second portion of the first fluid channel and the second portion of the second fluid channel, and

wherein a width of the first portion of the first fluid channel along the first side of the island is substantially constant, and a width of the first portion of the second fluid channel along the second side of the island is substantially constant.

14. (Original) The fluid ejection device of claim 13, further comprising:  
a resistor in the chamber.
15. (Original) The fluid ejection device of claim 13, further comprising:  
a first peninsula extended along the first fluid channel and a second peninsula extended along the second fluid channel; and  
a first sidewall extended between the first peninsula and the chamber and a second sidewall extended between the second peninsula and the chamber.
16. (Original) The fluid ejection device of claim 15, wherein the first sidewall is oriented at a first angle to the chamber and the second sidewall is oriented at a second angle to the chamber, wherein the second angle is less than the first angle.
17. (Original) The fluid ejection device of claim 16, wherein the first angle of the first sidewall is in a range of approximately 43 degrees to approximately 46 degrees, and the second angle of the second sidewall is in a range of approximately 30 degrees to approximately 34 degrees.
18. (Original) The fluid ejection device of claim 15, wherein the first sidewall is oriented substantially parallel with the first chamfered corner of the island and the second sidewall is oriented substantially parallel with the second chamfered corner of the island.

**Amendment and Response under 37 C.F.R. 1.116**

Applicant: Gopalan Raman

Serial No.: 10/789,040

Filed: February 27, 2004

Docket No.: 200400043-1

Title: FLUID EJECTION DEVICE

---

19. (Previously Presented) The fluid ejection device of claim 15, wherein the first peninsula is oriented substantially parallel with the first side of the island and the second peninsula is oriented substantially parallel with the second side of the island.

20. (Previously Presented) The fluid ejection device of claim 13, wherein a width of the first fluid channel along the first chamfered corner and the first side of the island is substantially constant, and a width of the second fluid channel along the second chamfered corner and the second side of the island is substantially constant.

21. (Currently Amended) A fluid ejection device, comprising:

a chamber;

a first fluid channel and a second fluid channel each communicated with the chamber;

an island separating the first fluid channel and the second fluid channel;

a first peninsula extended along the first fluid channel and having substantially parallel sides, and a second peninsula extended along the second fluid channel and having substantially parallel sides; and

a first sidewall extended between the first peninsula and the chamber along the first fluid channel and a second sidewall extended between the second peninsula and the chamber along the second fluid channel,

wherein the first fluid channel includes a first portion extended along the first peninsula and a second portion extended along the first sidewall, and the second fluid channel includes a first portion extended along the second peninsula and a second portion extended along the second sidewall.

wherein the chamber extends into the second portion of the first fluid channel and the second portion of the second fluid channel.

wherein the island is substantially rectangular and has a first chamfered corner along the first fluid channel and a second chamfered corner along the second fluid channel, wherein the first chamfered corner is oriented at a first angle and the second chamfered corner is oriented at a second angle different from the first angle, and

wherein the first sidewall as provided along the second portion of the first fluid channel is oriented substantially parallel with the first chamfered corner as provided along the

**Amendment and Response under 37 C.F.R. 1.116**

Applicant: Gopalan Raman

Serial No.: 10/789,040

Filed: February 27, 2004

Docket No.: 200400043-1

Title: FLUID EJECTION DEVICE

---

first fluid channel, and the second sidewall as provided along the second portion of the second fluid channel is oriented substantially parallel with the second chamfered corner as provided along the second fluid channel.

22. (Previously Presented) The fluid ejection device of claim 21, wherein a combined minimum width of the first fluid channel and the second fluid channel is in a range of approximately 34 microns to approximately 42 microns.

23. (Previously Presented) The fluid ejection device of claim 21, wherein a minimum length of each of the first fluid channel and the second fluid channel is in a range of approximately 29 microns to approximately 31 microns.

24-42. (Cancelled)

43. (Previously Presented) The fluid ejection device of claim 1, wherein a combined minimum width of the first fluid channel and the second fluid channel is in a range of approximately 34 microns to approximately 42 microns.

44. (Previously Presented) The fluid ejection device of claim 1, wherein a minimum length of each of the first fluid channel and the second fluid channel is in a range of approximately 29 microns to approximately 31 microns.

45. (Previously Presented) The fluid ejection device of claim 1, wherein a length of each of the first peninsula and the second peninsula is in a range of approximately 30 microns to approximately 52 microns.

46. (Previously Presented) The fluid ejection device of claim 1, wherein the first angle of the first sidewall is in a range of approximately 43 degrees to approximately 46 degrees, and wherein the second angle of the second sidewall is in a range of approximately 30 degrees to approximately 34 degrees.

**Amendment and Response under 37 C.F.R. 1.116**

Applicant: Gopalan Raman

Serial No.: 10/789,040

Filed: February 27, 2004

Docket No.: 200400043-1

Title: FLUID EJECTION DEVICE

---

47. (Previously Presented) The fluid ejection device of claim 21, wherein the first sidewall is oriented at a first angle to the chamber and the second sidewall is oriented at a second angle to the chamber, wherein the first angle is in a range of approximately 43 degrees to approximately 46 degrees and the second angle is in a range of approximately 30 degrees to approximately 34 degrees.
48. (Previously Presented) The fluid ejection device of claim 15, wherein a length of each of the first peninsula and the second peninsula is in a range of approximately 30 microns to approximately 52 microns.
49. (Previously Presented) The fluid ejection device of claim 13, wherein a combined minimum width of the first fluid channel and the second fluid channel is in a range of approximately 34 microns to approximately 42 microns.
50. (Previously Presented) The fluid ejection device of claim 13, wherein a minimum length of each of the first fluid channel and the second fluid channel is in a range of approximately 29 microns to approximately 31 microns.
51. (Previously Presented) The fluid ejection device of claim 11, wherein a length of each of the first peninsula and the second peninsula is in a range of approximately 30 microns to approximately 52 microns.
52. (Previously Presented) The fluid ejection device of claim 21, wherein a length of each of the first peninsula and the second peninsula is in a range of approximately 30 microns to approximately 52 microns.
53. (Currently Amended) A fluid ejection device, comprising:  
a chamber;  
a first fluid channel and a second fluid channel each communicated with the chamber;  
an island separating the first fluid channel and the second fluid channel;

**Amendment and Response under 37 C.F.R. 1.116**

Applicant: Gopalan Raman

Serial No.: 10/789,040

Filed: February 27, 2004

Docket No.: 200400043-1

Title: FLUID EJECTION DEVICE

---

a first peninsula extended along the first fluid channel and a second peninsula extended along the second fluid channel; and

a first sidewall extended between the first peninsula and the chamber along the first fluid channel and a second sidewall extended between the second peninsula and the chamber along the second fluid channel,

wherein the island is substantially rectangular and has a first side and a first chamfered corner each along the first fluid channel, and a second side and a second chamfered corner each along the second fluid channel, wherein the first chamfered corner is oriented at a first angle and the second chamfered corner is oriented at a second angle different from the first angle,

wherein the first fluid channel includes a first portion extended along the first side of the island and a second portion extended along the first chamfered corner of the island, and the second fluid channel includes a first portion extended along the second side of the island and a second portion extended along the second chamfered corner of the island,

wherein the chamber extends into the second portion of the first fluid channel and the second portion of the second fluid channel, and

wherein the first peninsula as provided along the first portion of the first fluid channel is oriented substantially parallel with the first side of the island as provided along the first portion of the first fluid channel, and the second peninsula as provided along the first portion of the second fluid channel is oriented substantially parallel with the second side of the island as provided along the first portion of the second fluid channel.

54. (Previously Presented) The fluid ejection device of claim 53, wherein a combined minimum width of the first fluid channel and the second fluid channel is in a range of approximately 34 microns to approximately 42 microns.

55. (Previously Presented) The fluid ejection device of claim 53, wherein a minimum length of each of the first fluid channel and the second fluid channel is in a range of approximately 29 microns to approximately 31 microns.



**Amendment and Response under 37 C.F.R. 1.116**

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Serial No.: 10/789,040

Filed: February 27, 2004

Docket No.: 200400043-1

Title: FLUID EJECTION DEVICE

---

56. (Previously Presented) The fluid ejection device of claim 53, wherein the first sidewall is oriented at a first angle to the chamber and the second sidewall is oriented at a second angle to the chamber, wherein the first angle is in a range of approximately 43 degrees to approximately 46 degrees and the second angle is in a range of approximately 30 degrees to approximately 34 degrees.

57. (Previously Presented) The fluid ejection device of claim 53, wherein a length of each of the first peninsula and the second peninsula is in a range of approximately 30 microns to approximately 52 microns.